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### (54) ESTIMATION SYSTEM FOR RESIDUAL WELDING STRESS AND RESIDUAL DEFORMATION

(57) Abstract:

PROBLEM TO BE SOLVED: To provide a system to efficiently estimate residual stress and residual deformation of a structure with weld zone.

SOLUTION: The structure including weld zone is divided into a plurality of substructures and classified into groups by shape. Regarding all the substructures, pertaining groups are registered on the data file 113. The substructures of each of the groups are divided into finite elements and are recorded on data file 114 with residual stress and residual deformation calculated. The individual finite element having distribution of residual stress and residual deformation recorded on the data file 114 is formed every group, which is used to estimate the residual stress and residual deformation of the whole structure.

